OUR BOOK SHELF.

The American Thoroughbred. By C. E. Trevathan. (American Sportsman's Library.) Pp. ix+495; illustrated. (New York: The Macmillan Company; London: Macmillan and Co., Ltd., 1905.) Price 8*s.* 6*d.* net.

FROM the point of view of the naturalist, the interest of this volume (which is no doubt an admirable guide to everything connected with racing on the other side of the Atlantic) is concentrated on the author's remarks with regard to the origin and development of the American thoroughbred. As a matter of fact, the racehorse in America has been produced mainly from an English ancestry, and is thus essentially of the English type; and the one matter for regret in his treatment of the subject is that the author does not appear to point out any features by which the American breed may be distinguished from its European prototype, as it is difficult to believe that minor differences between the two do not exist. The first thoroughbred imported into America seems to have been Bulle Rock, a horse foaled in England in 1718 and landed in Virginia in 1730. He was a scion of the Darley Arabian, and had also the blood of the Byerly Turk on the maternal side. The product of native-bred mares (that is to say, mainly the descendants of horses imported by the Spanish conquerors, which were themselves largely of Barb blood) by Bulle Rock formed the first foundation of the modern American racing stock. Diomed was another famous English stallion imported into Virginia in the old days; but long after the definite establishment of an American thoroughbred stock, considerable improvement was effected therein by the importation in 1836 of Glencoe, at that time a renowned English horse. Glencoe was by Sultan, and while in England sired Pocahontas, the dam of Stockwell, Rataplan, and King Tom, the three greatest sires the English turf has ever seen, and to one of which almost every living English racehorse can trace descent. With such a sire the future of the American thoroughbred was assured. In conclusion, we may congratulate the author on having added a valuable volume to a valuable library, as well as on having made an important contribution to our knowledge of the ancestry of the American racehorse.

R. L.

The Story of Reptile Life. By W. P. Pycraft. Pp. 212. (London: George Newnes, Ltd., 1905.) Price 1*s.*

THIS is a valuable addition to the "Newnes' Library of Useful Stories." Mr. Pycraft not only writes in a readable and entertaining style, but also has the happy faculty of selecting precisely those facts which enable him to expound general principles. The "Story of Reptile Life" is not an elementary book of natural history in the ordinary sense, but the outline of a really scientific treatise which is not too technical to be understood by a beginner. After some introductory remarks explaining that he has to deal with a race "whose glory has departed," the author proceeds to describe each of the groups of surviving reptiles, with some reference to their immediate ancestors as revealed by fossils. In each chapter he treats first of the most salient points in anatomy, and then proceeds to select a few of the more important living species for detailed notice. The account of the existing reptiles is followed by two chapters on domestic life and reptilian liveries. The book then concludes with chapters on the extinct flying reptiles, land reptiles, and sea reptiles. We have detected no serious errors, though it is difficult to accept all the author's speculations concerning some of the extinct forms, and there are more misprints than ought to be. The book also lacks adequate illustrations. It is, however, a worthy sequel to Mr. Pycraft's earlier "stories" of birds and fishes, and we hope he may soon complete the series by a final volume on the mammals.

Digest of the Evidence given before the Royal Commission on Coal Supplies (1901–1905). Vol. i. Pp. lxiv+474. (London: The *Colliery Guardian* Co., Ltd.) Price 21*s.*

THE *Colliery Guardian* has done useful work in preparing this digest of the evidence given before the Royal Commission on Coal Supplies. The 25,662 questions and answers contained in the official minutes of evidence do not constitute an attractive form of technical literature; but with the matter rearranged and classified under separate heads, and the interrogative converted into the narrative form, it is surprising to find what an enormous amount of valuable information has been got together. With the exception of a brief historical introduction, no comment is made on the evidence, and such additions as the witnesses have found desirable when revising their evidence have been printed as footnotes. The work will be completed in three volumes, the subjects dealt with in the first being the working of thin seams, the limit of depth in mining, waste in working and coal-cutting machinery. There is a good index and a useful bibliography of the subjects discussed. Printed in large type, with the illustrations admirably reproduced, the work forms a valuable companion to the official Blue-books, and, indeed, from the point of view of the mining student, may replace them altogether.

Wasps, Social and Solitary. By George W. Peckham and Elizabeth G. Peckham. With an introduction by John Burroughs. Pp. xv+311; illustrated. (London: Constable and Co., Ltd., 1905.) Price 6*s.* net.

THIS book is founded on a series of papers published some years ago by the Wisconsin Biological Survey under the title of "Instincts and Habits of the Solitary Wasps," with much new matter added. It is a record of very patient field observations on the lines with which Fabre's well-known "Souvenirs Entomologiques" (constantly referred to, and compared by our present authors with their own) have made us familiar.

The wasps discussed are chiefly those which provision their nests with caterpillars and other insects, or with spiders; and the genera noticed are Vespa, Ammophila, Sphex, Rhopalum, Odynerus, Aporus, Crabro, Bembex, Cerceris, Philanthus, Trypoxylon, Pompilus, Tachytes, Chlorion, Pelopœus, Astata, Oxybelus, &c., all of which (Sphex, Bembex, and Chlorion excepted) include British species. Many persons are interested in the habits of insects who have not time or opportunity to observe them for themselves, and to all such we heartily commend this important work on the manners and customs of North American wasps.

W. F. K.

X-Rays: their Employment in Cancer and other Diseases. By Richard J. Cowen. Pp. viii+126. (London: Henry J. Glaisher, 1904.) Price 2*s.* 6*d.* net.

THE author of this work states in his preface that he has made no effort to summarise all the valuable work which has been done in radiotherapy, and he has only tried to select such part as seems to him to be most likely to assist those practitioners in the therapeutic

properties of X-rays, the choice of apparatus, and the technique.

In the first twenty-four pages the apparatus is considered, and the remainder of the work, with the exception of two short chapters, is devoted to brief consideration of a number of skin affections, including malignant disease. The book will certainly be of service to those for whom it is intended, and many practitioners who desire to become acquainted with this new branch of electrotherapeutics will find it a useful introduction. The work is well written and unpretentious, and Dr. Cowen has succeeded in the aim laid down in his preface.

Neue Abhandlungen über den menschlichen Verstand. By G. W. v. Leibniz. Translated, with introduction, by C. Schaarschmidt. Second edition. Pp. lxviii+590. (Leipzig: Dürr'sche Buchhandlung, 1904.) Price 6 marks.

Immanuel Kant's Logik. By G. B. Jäsche. Third edition. New edition by Dr. W. Kinkel. Pp. xxviii+171. (Leipzig: Dürr'sche Buchhandlung, 1904.) Price 2 marks.

Lazarus der Begründer der Völkerpsychologie. By Dr. Alfred Leicht. Pp. 111. (Leipzig: Dürr'sche Buchhandlung, 1904.) Price 1.40 marks.

THE first two of the above-mentioned works appear as parts of the excellent "Philosophische Bibliothek." The translation of the Leibniz into the philosopher's native tongue appears to be all that could be desired, and the introduction gives an analysis of the work. We gather that some 460 explanatory notes are to be found in the succeeding volume of the series. This edition of "Kant's Logik" is intended to supersede the uncritical one of Von Kirchmann, who relied only on the second Hartenstein edition of 1868. The present editor has gone back to the original text of Jäsche, and has also compared the other important editions, the first Hartenstein and the Rosenkranz, both of 1838. The spelling is completely modernised. Prof. Moritz Lazarus was, with Steinthal, the founder of the *Zeitschrift für Völkerpsychologie und Sprachwissenschaft* in 1859, and his works not only contain much sound psychology, but are also permeated by a fine ethical spirit. His long life and labours are here described by a singularly appreciative disciple.

LETTERS TO THE EDITOR.

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of* NATURE. *No notice is taken of anonymous communications.*]

British Fruit Growing.

THE question of "the diversity of yield from farms in the same neighbourhood" to which you referred in your article on the report of the fruit committee is, as Mr. Alfred Walker remarks, one of very great complexity. No evidence on this subject, however, was offered to the fruit committee by the numerous growers who appeared as witnesses before them, and it would certainly seem to be a subject more suited for investigation at an experimental station than one which could be dealt with by a departmental committee.

Meteorological conditions are, no doubt, primarily responsible for most failures of cropping, and, in a climate such as that of our islands, we can never hope to do more than mitigate the evil effects of inopportune cold. The destruction of the blossoms is generally due—as in 1903—to cooling by radiation, and the best safeguard against this form of cooling is a fairly elevated position, and a lie of the ground favourable to the draining away of the cold air from the plantation. Good air drainage is probably more important in fruit growing than good water drainage. Various means have been investigated for reducing radiation by artificial means, but the results have not yet proved themselves to be successful, at any rate from an economic point of view.

The destruction of blossoms, however, is caused sometimes by a low atmospheric temperature produced by means other than surface radiation. This was the case in the present year, when the destructive cooling agent was a cold wind. A warm, low situation, with plenty of shelter, will afford some safeguard against damage from such a source; and these, unfortunately, are just the conditions which will increase the danger from radiation frosts.

There is no doubt, however, that the damage done by a low temperature is not always done in a direct manner. A continued spell of cold weather at the blossoming season is inimical to the activity of the various insects on which pollination mainly depends, and we are not yet in a position to say that a sluggish action of the roots and leaves may not itself be directly detrimental to the process of fertilisation. The number of apples and, still more, of pears which have been imperfectly fertilised, and have, therefore, dropped prematurely, have been very noticeable this year.

What part the nature of the soil plays in modifying the action of cold on the trees is one which is very difficult to foretell or to determine. We can never have two plantations in different soils while being in exactly similar positions; and the question whether a blossom will be reduced to a lower temperature by radiation in the moist air overlying a clay soil than it would be in the dryer air overlying a gravel soil, or whether, if reduced to the same temperature in both cases, it would suffer more in the one than in the other, is a question on which we cannot dogmatise. We must not be misled by the feeling of cold experienced in two such cases by the human subject; indeed, watering the trees and ground is one of the methods suggested for obviating the effects of radiation frosts. Differences of soil, also, will act indirectly in the matter by affecting the root-action and the forwardness of the blossoms.

On one point, however, I think there can be no doubt, namely, that the best safeguard against injury by frost, where frost is inevitable, is a healthy condition of the tree itself. It has been a matter of continued observation that with similarly situated plantations, and with similar trees in the same plantation, those which are most healthy will nearly always suffer least from frost. It is specially noticeable that with trees which are weakly, even when they carry (as will often happen) a great abundance of blossom, injury from frost is very severe, although the abundance of blossom should be favourable to some of these being preserved from destruction.

It is in this direction—the general health of the trees and the raising of healthier and hardier varieties—that success in diminishing loss by frosts will most probably be achieved. It is hardly probable, I think, that much will be effected, at any rate in the case of apples, by raising varieties blossoming late enough to escape frosts. These frosts, as we all know, often occur very late in the year, and though every day by which the blossoming is retarded must, on the average, diminish the risk of its destruction, there would appear to be but little chance of our being able to retard it sufficiently to diminish that risk to any material extent. It must be remembered, also, that though we might raise a late blossoming apple, it is a hundred chances to one that the fruit would be able to compete in the market with known varieties.

The flowers of the large majority of English apples would appear to open within a period of about ten days. Observations made this year on 117 varieties gave a total range of 16 days, but 98 per cent. of these varieties opened within a range of 13 days, and 84 per cent. within a range of 9 days. The extent of the variation, therefore, is not sufficiently large to offer much promise of success in raising a variety which would escape frost by its lateness of flowering. It is noticeable, however, that our English apples appear to be rather earlier in their flowering than varieties belonging to other countries, when all are grown under the same conditions. The results obtained at Woburn this year were as follows, the dates being those of the opening of the first flowers, and the fractions of dates arising, of course, through the taking of the means. The number of varieties under observation are given, and